

CLAIMS

1. A radiation protection system for shielding medical personnel from x-rays from an x-ray emitter while working on a patient, comprising:

an x-ray table having a first side, a second side and a top surface, the top surface for
5 supporting a patient;

a radiation-shielding cubicle having an interior defining a medical personnel region, the cubicle having a ceiling, floor, a first wall for separating the medical personnel from an x-ray emitter disposed outside of the cubicle, a second wall extending from one end of said first wall adjacent to a first side of the x-ray table and a third wall extending from the first wall
10 adjacent to a second side of the x-ray table, the first wall having an opening for locating a portion of the x-ray table into the interior of the cubicle;

a radiation-shielding screen attached to the x-ray table for covering the portions of the patient and the top surface of the x-ray table located in the interior of the cubicle;

a radiation-shielding flexible interface for joining the x-ray table to the cubicle, the
15 flexible interface having a flexible radiation-resistant skirt sealing the opening; and
an integrated procedural environment.

2. The system of claim 1 wherein said integrated procedural environment comprises a control module for controlling the x-ray table, x-ray emitter or environmental conditions.

3. The system of claim 1 wherein said integrated procedural environment comprises an
20 operator's chair positionable within the medical personnel region within the cubicle.

4. The system of claim 3 wherein said chair comprises a control module for controlling the x-ray table, x-ray emitter, or environmental conditions.

5. The system of claim 1 wherein said integrated procedural environment includes at least one fluoroscopic/cine screen mounted within the cubicle.

6. The system of claim 5 wherein said integrated procedural environment further comprises at least one physiological monitor mounted within the cubicle.
7. The system of claim 6 wherein said fluoroscopic screen and monitor are re-positionally mounted on the interior surface of the second wall of the cubicle.
- 5 8. The system of claim 1 wherein said integrated procedural environment comprises said radiation resistant screen having a vascular access drape, the drape having one or more ports for facilitating access to the patient.
9. The system of claim 8 wherein said drape comprises a circumferential pleated portion sealing said drape with said interface, x-ray table and cubicle.
- 10 10. The system of claim 8 wherein said drape further comprises one or more channels in continuity with said ports.
11. The system of claim 10 wherein said channels are formed by separating flaps of overlapping portions of drape material which, when closed, recomplete a radiation resistant seal over the channel.
- 15 12. The system of claim 8 further comprising one or more radiation-shielding cloaks sized for positioning a radiation-resistant seal over said one or more ports.
13. The system of claim 12 wherein at least one of said cloaks has a re-closable radial slit and central orifice for positioning over a port and around procedural equipment passing through said port to provide a radiation-resistant seal over said port while allowing said
- 20 procedural equipment to pass through the orifice of said cloak.
14. The system of claim 1 wherein said environment includes conduit internal to said table into which leads, lines and other procedural equipment may be consolidated and orderly routed.
15. The system of claim 1 wherein said integrated procedural environment further
- 25 includes at least one patient arm rest integral to said table.

16. The system of claim 15 wherein said arm rest comprises integrated restraints and physiological sensors.

17. The system of claim 1 wherein said environment comprises a platform disposed in or near the personnel region for holding procedural equipment.

5 18. The system of claim 1 wherein said environment comprises a radiation detector in operative connection to the interior of said cubicle and said x-ray emitter such that detection of excess radiation levels within said cubicle will shut down said x-ray emitter.

19. A radiation protection system for shielding medical personnel from x-rays from an x-ray emitter while working on a patient, comprising:

10 an x-ray table having a first side, a second side and a top surface, the top surface for supporting a patient;

a radiation-shielding cubicle having an interior defining a medical personnel region, the cubicle having a ceiling, floor, a first wall for separating the medical personnel from an x-ray emitter disposed outside of the cubicle, a second wall extending from one end of said first
15 wall adjacent to a first side of the x-ray table and a third wall extending from the first wall adjacent to a second side of the x-ray table, the first wall having an opening for locating a portion of the x-ray table into the interior of the cubicle;

a radiation-shielding screen attached to the x-ray table for covering the portions of the patient and the top surface of the x-ray table located in the interior of the cubicle;

20 a radiation-shielding flexible interface for joining the x-ray table to the cubicle, the flexible interface having a flexible radiation-resistant skirt sealing the opening; and

an integrated procedural environment comprising:

a control module for controlling the x-ray table, x-ray emitter or environmental conditions;

25 fluoroscopic/sine screens mounted within the cubicle;

physiological monitors mounted within the cubicle;

wherein said radiation resistant screen has a vascular access drape having one or more ports for facilitating access to the patient;

wherein said drape comprises a circumferential pleated portion sealing said drape
5 with said interface, table and cubicle;

wherein said drape further comprises one or more channels in continuity with said ports;

wherein said channels are formed by separating flaps of overlapping portions of drape material which, when closed, recomplete a radiation resistant seal over the channel;

10 one or more radiation-closing cloaks sized for positioning a radiation-resistant seal over said one or more ports;

wherein at least one of said cloaks has a re-closable radial slit and a central orifice for positioning over a port and around procedural equipment passing through said port to provide a substantially radiation-resistant seal over said port while allowing said procedural

15 equipment to pass through the orifice of said cloak;

conduit internal to said table into which leads, lines and other procedural equipment may be consolidated and orderly routed;

at least one patient arm rest integral to said table comprising integrated restraints and physiological sensors;

20 a platform disposed in or near the personnel region for holding procedural equipment;
and

a radiation detector and operative connection to the interior of said cubicle and said x-ray emitter such that detection of excess radiation levels within said cubicle will shut down said x-ray emitter.

25 20. The method of using a system of claim 19 comprising the steps of:

providing a sterilely prepared patient and x-ray table;

extending the sterilized or sterilely covered screen from the foot of the x-ray table to approximately the patient's knee area;

5 positioning a sterilely prepared vascular access drape such that the ports are located over the right and left femoral vascular access regions of the patient;

positioning the circumferential pleated portion of said drape such that it is in operative connection with said interface, table and cubicle to form a radiation-resistant seal;

positioning a sterilely prepared cloak over any unused access port to create a radiation-resistant seal over the port;

10 achieving vascular access into the patient through a port; and

positioning a sterilely prepared cloak having a reclosable radial slit and central orifice such that a substantially radiation-resistant seal is created over said port and around said procedural equipment.